

Universiteit Utrecht

Faculty of Geosciences



Early Holocene environmental change and the impact of Mesolithic man in the **Tungelroysche Beek Valley, N-Limburg** Lineke Woelders¹, Jan Willem de Kort² & Wim Hoek¹ ¹ Faculty of Geosciences, Utrecht University, the Netherlands ² Rijksdienst voor het Cultureel Erfgoed, the Netherlands



In the Tungelroysche Beek valley near Mildert (province of Limburg, the Netherlands) the remains of two red deer specimens (*Cervus elaphus*) were discovered by the Rijksdienst voor het Cultureel Erfgoed (RCE) in 2011. These remains were dated to 6570 ± 40 BP and 9650 \pm 50 BP, respectively. The dated deer remains in association with flint tools found at the site by the RCE, indicate Early Mesolithic human activity at the site.

A core taken by the RCE close to the remains was investigated in this research to reconstruct the vegetation and landscape development during the Early Mesolithic. This was done by determining lithological changes combined with palynological investigation of the core. The core shows a continuous Early Holocene sequence from Early Preboreal into the Atlantic.





 Microscopic charcoal record shows relatively high values

• A slight increase in Poaceae and non-arboreal pollen at the end of Tung 2 (PAZ 4c) in the Tungelroysche Beek diagram is observed. This increase is absent in other diagrams of this zone. This could indicate clearance of woodland by humans, although not many trees were present locally

• The red deer remains, dated around 9600 to 9700 BP by the RCE, fit in this time frame in which high fire activity coincides with a slight increase in non-arboreal pollen

 \rightarrow The palynological evidence together with the microscopic charcoal and red dear remains suggests that human activity may have occurred during zone Tung 2.



Tungelroysche Beek (Mildert)



 Temporary increase in microscopic charcoal and temporary slight increase in nonarboreal pollen and Artemisia

• Remarkably, there are no clear indications of dryness during this zone, probably related to the local wet environment with relative high *Salix* values

• LOI curve shows an abrupt decrease in organic content at this point, possibly indicating woodland clearance

 \rightarrow Temporarily more fires and

Palynological evidence combined with microscopic charcoal and LOI values suggests **Early Mesolithic activity in the vicinity of the** investigated core taken from the Tungelroysche **Beek valley. However, human activity cannot be** proven based on this evidence alone. Further research is recommended on this site. It is important to find evidence for an Early **Mesolithic settlement in the area. Furthermore,** also the macroscopic charcoal signal should be investigated to rule out the possibility that the observed signal of fires is actually a very regional and not local signal.